
	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 11/03
	Subsection: Legionellosis	Page 1 of 7

## Legionellosis Table of Contents

[Legionellosis  
Fact Sheet](#)  
[Legionellosis Case Report \(CDC 52.56\)](#)

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Revised 11/03
	Subsection: Legionellosis	Page 2 of 7

## *Legionellosis*

### **Overview**<sup>(1,2)</sup>

For a more complete description of Legionellosis, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM).
- Red Book, Report of the Committee on Infectious Diseases.

### **Case Definition**<sup>(3)</sup>

#### *Clinical description*

Legionellosis is associated with two clinically and epidemiologically distinct illness: Legionnaires disease, which is characterized by fever, myalgia, cough, pneumonia, and Pontiac fever, a milder illness without pneumonia.

#### *Laboratory criteria for diagnosis*

- Isolation of *Legionella* from respiratory secretions, lung tissue, pleural fluid, or other normally sterile fluids, or
- Demonstration of a fourfold or greater rise in the reciprocal immunofluorescence antibody (IFA) titer to greater than or equal to ( $\geq$ ) 128 against *Legionella pneumophila* between paired acute- and convalescent-phase serum specimens, or
- Detection of *L. pneumophila* in respiratory secretions, lung tissue, or pleural fluid by direct fluorescent antibody testing, or
- Demonstration of *L. pneumophila* serogroup 1 antigens in urine by radioimmunoassay or enzyme-linked immunosorbent assay

#### *Case classification*

*Confirmed:* a clinically compatible case that is laboratory confirmed


*Presumptive:* a single IFA titer  $\geq$ 1:256 in a patient with a compatible clinical illness without laboratory evidence of infection with another etiological agent.<sup>(4)</sup>

*Suspect:* a clinically compatible case that is epidemiologically linked to a confirmed case.<sup>(4)</sup>

### **Information Needed for Investigation**

**Verify the diagnosis.** What laboratory tests were conducted? What were the results? What laboratory conducted the testing and what is their phone number? What are the patient's clinical symptoms? What is the name and phone number of the attending physician?

**Establish the extent of illness.** Determine if household or other close contacts are, or have been ill, by contacting the health care provider, patient or family member.

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Revised 11/03
	Subsection: Legionellosis	Page 3 of 7

**Contact the Regional Communicable Disease Coordinator** if an outbreak is suspected.

### **Case/Contact Follow Up And Control Measures**

Determine the source of infection.

- Determine the case's risk factors for acquiring legionellosis.
- For community acquired cases, provide a description of all places visited by the case during the 10 days prior to disease onset.
- For nosocomial cases, a list of rooms and procedures associated with the patient during the 10 days prior to illness.
- Determine if similar exposures exist for any previous cases.

### **Control Measures**

See the Legionellosis section of the Control of Communicable Diseases Manual (CCDM), "Control of patient, contacts and the immediate environment".

See the *Legionella pneumophila* Infections section of the Red Book.

### **Laboratory Procedures**

#### **Specimens:**

Consult the Regional Communicable Disease Coordinator prior to collecting or submitting specimens.

Clinical specimens may consist of:


- a) Urine for *Legionella pneumophila* serogroup 01 only
- b) Single or paired serum for *Legionella pneumophila* serogroups 1 – 06 and several non-pneumophila species.
- c) Respiratory secretions and tissue for DFA or culture.

#### **Environmental samples:**

Generally, it is unproductive to collect environmental samples without epidemiological evidence identifying a possible source. Consult the Regional Communicable Disease Coordinator prior to environmental sample collection.

When environmental samples are indicated:

1. Contact the Missouri State Public Health Laboratory prior to collection. Special media are normally used to isolate *Legionella* spp.
2. Water samples are normally collected in one liter sterile containers. Cotton swabs moistened with sterile water can be used to swab faucets and other surfaces that may contain *Legionella* spp.

	Division of Environmental Health and Communicable Disease Prevention	
	Section: 4.0 Diseases and Conditions	Revised 11/03
	Subsection: Legionellosis	Page 4 of 7

## **Reporting Requirements**

Legionellosis is a Category II disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 3 days of first knowledge or suspicion.


1. For confirmed, presumptive, and suspect cases, complete a “Disease Case Report” (CD-1) and “Legionellosis Case Report” form (CDC 52.56.)
2. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
3. Send the completed secondary investigation form to the Regional Office.
4. All outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

## **References**

1. Chin, James, ed. “Legionellosis.” Control of Communicable Diseases Manual, 17<sup>th</sup> ed. Washington, DC: American Public Health Association, 2000: 281-283.
2. American Academy of Pediatrics. “*Legionella pneumophila* Infections.” In: Pickering, L., ed. 2000 Red Book: Report of the Committee on Infectious Diseases, 25<sup>th</sup> ed. Elk Grove Village, IL. 1997: 364-365.
3. Centers for Disease Control and Prevention. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46 (No. RR-10): 20.
4. Missouri Department of Health and Senior Services- Section of Communicable Disease Control and Veterinary Public Health surveillance case definition.

## **Other Sources of Information**

1. Yu, Victor L. “*Legionella Pneumophila* (Legionnaires’ Disease).” Mandell , Gerald L., John E. Bennett, & Raphael Dolin, Eds. Principles and Practice of Infectious Diseases, 5<sup>th</sup> ed. New York: Churchill Livingstone, 2000: 2424-2435.
2. Butler, Jay C. and Robert F. Breiman. “Legionellosis.” Bacterial Infections of Humans Epidemiology and Control, 3<sup>rd</sup> ed. Eds. Alfred S. Evans and Philip S. Brachman. New York: Plenum, 1998: 355-370.
3. Winn, Washington C. Jr. “*Legionella*”. <http://gsbs.utmb.edu/microbook/ch040.htm> (4 June, 2003)

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 11/03
	Subsection: Legionellosis	Page 5 of 7

4. Mobeen Rathore and Alvarez, A. "Legionella Infection." eMedicine Journal, March 6 2002, V 3, N 3, <http://www.emedicine.com/ped/topic1288.htm> (4 June, 2003)

# **Legionellosis**

(Legionnaires Disease, Pontiac Fever)

## **FACT SHEET**

### **What is Legionellosis?**

Legionellosis is an infectious disease caused by bacteria called *Legionella*. The disease may take two forms; the more serious form may develop into pneumonia. Cases of disease may occur throughout the year, but most cases occur in the summer and fall. Normally this disease occurs as single cases, however, outbreaks have occurred in Missouri.

### **Who gets Legionellosis?**

Anyone can get Legionellosis, but the disease is most common among middle-aged or older men. Individuals who have weakened immune systems due to chronic diseases, such as diabetes, kidney failure or HIV infection are at higher risk of the disease. In addition, those who have an immune system that has been altered by medications, such as steroids or chemotherapy may get the disease more often. Smokers and heavy drinkers are also more prone to get the disease.

### **How is the disease spread?**

The bacteria are sometimes contained inside fine mists created by such things as water-cooling towers, hot tubs, and decorative fountains. It is possible for people to inhale the mist. Person to person spread does not occur.

### **What are the symptoms of Legionellosis?**

Most cases of Legionellosis probably present with very mild symptoms. However, for those who develop more severe symptoms, there are two distinct forms. Usually, there is a flu-like illness with body aches, loss of appetite and dry cough. Within 24 hours, there are chills and fever, sometimes as high 102<sup>0</sup>F – 105<sup>0</sup>F. For those who develop the Pontiac Fever form of Legionellosis, recovery will usually be in 2 – 5 days without treatment. For those who develop the Legionnaires form of the disease, pneumonia usually develops and medical treatment is necessary.

### **How soon do symptoms appear?**

For Pontiac fever, symptoms usually appear within 24-48 hours following exposure, although it may be anywhere from 5 hours to 66 hours following exposure. The Legionnaires form of the disease takes longer to develop, and symptoms may appear from 2 – 10 days following exposure, although most cases occur within 5-6 days after exposure.

**How long can an infected person carry *Legionella*?**

There is no carrier state for Legionellosis. Testing the blood of someone years after they have had the disease may reveal the presence of antibodies to *Legionella*. But this only means that they once had the disease, not that they have the disease today.

**Where are the *Legionella* bacteria found?**

*Legionella* bacteria like water, and have been isolated from ponds, creeks, lakes, and moist soil. They can also be found in many man-made environments such as hot-water tanks, water-cooling towers, fountains and even in drinking water. Because these organisms are so common and so rarely cause disease, testing of environmental samples is not usually done unless more than one person becomes ill.

**What is the treatment for Legionellosis?**

Antibiotics, such as erythromycin, are usually used to treat the disease.

**What can a person or community do to prevent the spread of Legionellosis?**

People who own hot tubs or spas should follow the manufacturer's directions about how often the units should be cleaned. Home hot water tanks should be maintained above 122<sup>0</sup> F to prevent growth of the bacteria. Large water-cooling towers should be drained when not in use and maintained according to the directions.

**Where can I get more information?**

Contact your physician, nurse or clinic. Another good place to get information is the local public health agency or regional health office. Their telephone numbers are always listed in the phone book. You may also contact the Disease Investigation Unit in the Section for Prevention of Communicable Diseases at (573) 751-6113. .

**Missouri Department of Health and Senior Services  
Section for Communicable Disease Prevention  
Phone: (866) 628-9891 or (573) 751-6113**